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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,061	04/02/2004	Jin-Yub Lee	4591-365	2659

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EXAMINER

SCHLIE, PAUL W

ART UNIT	PAPER NUMBER
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2186

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/19/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/817,061		LEE, JIN-YUB	
	Examiner		Art Unit	
	Paul W. Schlie		2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-6,8-19 and 26 is/are rejected.
- 7) ☒ Claim(s) 4, 20-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-6 and 8-26 have been examined as amended, with claim 7 being canceled.

Priority

2. Applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d) is acknowledged.

Response to Arguments

3. Applicant's arguments filed 11/8/06 with respect to the rejection of claims 20-25 under 35 U.S.C. paragraph 112 have been fully considered and are persuasive, and thereby withdrawn.

Applicant's arguments filed 11/8/06 with respect to the rejection of claims 1-3, 5-6, 8-19, and 26 have been fully considered but are not persuasive or considered moot in view of their subsequent rejection as necessitated by amendment; as per the applicant's own arguments presented in traverse of the rejection of claims under 35 U.S.C. paragraph 103, Conley is acknowledged as teaching an improvement over the prior art (i.e. implicitly, error detection/correction performed in series with the page copying process, and similarly correspondingly claimed by the applicant), so that the potential "performance penalty" associated with the logic implementing the process need only be born in the unlikely event that an error is actually detected and then corrected by the logic depicted by Conley (figure 6, i.e. ECC "Error Correction Code" logic block; and column 1 lines 38-40) and thereby enable words within a page to be copied to another in parallel rather than otherwise having wait until all words have been first read in order to determine if any errors were present prior to their being subsequently written to their

Art Unit: 2186

destination page (column 2 lines 62-67); and thereby all claims corresponding to a serial implementation as acknowledged prior art utilizing conventionally well understood means are not considered patentably distinguishable over the art of record.

However, newly amended claims 4 and 20-25 are considered patentably distinguishable over the art of record, and thereby would be allowed if presented in proper form.

Allowable Subject Matter

4. Claims 4 and 20-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in proper form including all of the limitations of the base claim and any intervening claims within the independent claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-6, 8-19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conley et al. (6,266,273).

As per independent claims 1, 6, 11 and 14, Conley et al. teaches and implicitly acknowledging as prior art that pages within a non-volatile memory may be error detected/corrected in parallel and/or implicitly in series while being autonomously copied from a designated logical source to destination page utilizing an intermediate local temporary data page/sector buffer/register from which the validity of said data is

Art Unit: 2186

determined and then potentially corrected utilizing an ECC means based implicitly upon correspondingly previously computed and stored parity associated with said data, such that the data ultimately copied has been verified as being free of correctable errors potentially present prior to said copying. (See column 1 lines 32-41, column 3 lines 16-24, column 4 lines 3-16, and figures 5-6.)

As per claims 2-3, 5, 8-10, 12-13, 15-19 and 26 being dependent on claims 1, 6, 11, 14, or correspondingly dependent claim inclusively, as NAND architecture based flash memories were commonly understood by those of ordinary skill in the art, and in view that although Conley et al. did not teach a specific block parity based ECC method which may be utilized to determine and subsequently correct page/sector data errors, as such methods were considered well understood by those of ordinary skill in the art (inclusive of those more specifically utilizing a parity code derived from a mod2 sum of hamming codes/parities computed for a sequence of words such that the specific word containing a correctable error may be analogously determined and correspondingly corrected as evidenced by prior art noted in patents 4,358,848 and 4,453,251), the use of any generally analogous ECC method in combination with that taught by Conley et al. is considered to be obvious to one of ordinary skill in the art at the time of the claimed invention, for the benefit of enabling the encoding, detection, and potential subsequent correction of page/sector data errors prior to being copied into said second location within a NAND flash memory device as may be desired as per claims (2-3 and 5); where further as claims (8-10, 12-13 and 15-19) are considered encompassed by claims

Art Unit: 2186


(2-3 and 5) in other form, they are correspondingly rejected based upon the same arguments as presented above.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765. The examiner can normally be reached on Mon-Thu 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


PIERRE BATAILLE
PATENT EXAMINER
12/08/06